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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/466,961	12/20/1999	YOUN GYOUNG CHANG	8733.20050	1786

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EXAMINER	
BROCK II, PAUL E	

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/466,961	CHANG ET AL.	
	Examiner	Art Unit	
	Paul E Brock II	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,9,15,17 and 22-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,3,4,9 and 22-25* is/are allowed.

6)☒ Claim(s) *15 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (USPAT 5895936) in view of den Boer et al. (USPAT 5656824, den Boer) and the applicant's admitted prior art (AAPA).

With regard to claim 15, Lee discloses in figure 5 a switching TFT (115). Lee discloses in figure 5 a gate electrode (116) on a transparent substrate (109). Lee discloses in figure 5 an insulating layer (113) over the gate electrode. Lee discloses in figure 5 a semiconductor layer on the insulating layer and adjacent the gate electrode, wherein the semiconductor layer includes an active layer (119) and a contact layer (black layer between 118 and 119, and between 118 and 114). Lee is silent to teaching that the contact layer is an ohmic contact layer. den Boer teaches in figure 2 an ohmic contact layer (34). It would have been obvious to use the ohmic contact layer of den Boer in as the contact layer of Lee in order to produce a reliable contact to semiconductor region. Lee discloses in figure 5 spaced apart first (120) and second (118) switching electrodes on the semiconductor layer that define a channel region, wherein the second switching electrode electrically contacts the contact layer. Lee discloses in figure 5 wherein the

second switching electrode is a dual layer structure comprised of a conducting layer (114) and a drain layer (118) that extends over the conductive material and that wraps around an end of the conductive material so as to contact the ohmic contact layer. Lee is silent to the conducting layer being a transparent conducting layer and the drain electrode being a metal electrode. den Boer further teaches in figure 2 a transparent conducting layer (42) and a non-transparent metal layer (40, of non-transparent chrome) for a dual layer electrode (40/42). It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the transparent conductive layer and metal layer of den Boer as the conductive material and drain electrode material, respectively, in the dual layered electrode of Lee in order to use a known material for a conductive layer and drain electrode that create ohmic contact to the ohmic contact layer. Lee teaches in figure 5 a storage capacitor having a first storage electrode (114) and a second storage electrode (112), wherein the second storage electrode of the storage capacitor connects to the second switching electrode. Lee does not teach a sensor TFT having a gate electrode and spaced apart first and second sensor electrodes. The AAPA teaches in figure 1 a sensor TFT (C) having a gate electrode (11) and spaced apart first (27a) and second (27b) sensor electrodes. The AAPA further teaches that a storage capacitor has a first storage electrode (13) and a second storage electrode (29) wherein the second storage electrode of the storage capacitor connects to the first sensor electrode and to a second switching electrode (31b). It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the sensor electrode and connections of the AAPA in the method of Lee in order to generate an optical current relative to the amount of light reflected from a subject as taught by the AAPA on page 2, lines 12 – 14. The sensor TFT of the AAPA therefore adds a further degree of control to the optical sensor of Lee.

With regard to claim 17, Lee teaches in figures 2b and 5g, in combination with the teaching of den Boer, wherein the transparent conducting layer contacts the side of the active layer (through the contact layer).

Allowable Subject Matter

3. Claims 1, 3, 4, 9, and 22 – 25 are allowed.

Response to Arguments

4. Applicant's arguments with respect to claim 25 and 17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul E Brock II whose telephone number is (571) 272-1723. The examiner can normally be reached on 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul E Brock II